

ABSTRACT

The present invention is directed to a non-aqueous electrolyte for lithium secondary battery, having both
5 flame retardancy (self-extinguishing property) or nonflammability (having no flash point) and high conductivity and being electrochemically stable, and a lithium secondary battery using the non-aqueous electrolyte. Specifically, the non-aqueous electrolyte of
10 the present invention comprises a non-aqueous solvent which comprises (a) at least one phosphate selected from (a1) a chain state phosphate and (a2) a cyclic phosphate as an essential component, and which may contain (b1) a cyclic carboxylate and (b2) a cyclic carbonate. Further, the non-
15 aqueous electrolyte comprises the above non-aqueous solvent which further comprises (c1) a vinylene carbonate compound and/or (c2) a vinylethylene carbonate compound, and at least one compound selected from the group consisting of
20 (d1) a cyclic amide compound, (d2) a cyclic carbamate compound, and (d3) a heterocyclic compound.